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**The Red seabream (*Pagellus bogaraveo*) fishery in the Strait of Gibraltar: ICES Subarea IX
updated data.**

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Abstract

This paper presents the available information of the Red seabream fishery in the Strait of Gibraltar and updates the documents presented in previous years with the information from the last analyzed year, 2010. The document presents data about landings, LPUE, length frequencies and also observers on board programme information which should be useful for considerations about the fishery.

1. Introduction and fishery description

Since the early 1980's an artisanal fishery targeted to the red seabream (*Pagellus bogaraveo*, namely "voraz") have been developing along the Strait of Gibraltar area (ICES IXa south). This fishery has already been broadly described in previous Working Documents presented to the ICES WGDEEP (Gil *et al.*, 2000; Gil & Sobrino, 2001, 2002 and 2004; Gil *et al.*, 2003, 2005, 2006, 2007, 2008, 2009 and 2010). Spanish red seabream fishery in the Strait of Gibraltar is almost a monospecific fishery with one clear target species which represents the 74% from the total landed species which constitutes a fleet component by himself (Silva *et al.*, 2002).

The Instituto Español de Oceanografía (IEO) began the study and the fishery monitoring following the request from the Fishermen Corporations. In 2006, 2008 and 2010 assessment trials were attempted within the ICES WGDEEP (ICES, 2006, 2008 and 2010).

The main objective of this paper is to provide an updated summary of the current status of knowledge on the fishery and biology of this deep-water species in ICES area IX at the 2011 ICES WGDEEP meeting.

2. Material and methods

Fishery information was gathered for the period 1983-2010 from the sale sheets: monthly landings, monthly number of sales and the number of days in which those sales were carried out. Moreover, from the beginning of the IEO monitoring, June 1997, an *ad hoc* monthly length samplings from the different commercial sizes are carrying out to estimate the landings length distribution (Gil *et al.*, 2000).

Besides, from 2005 to 2009 a scheme of observers on board “voracera” fleet has been carried out. Sampling level was 5 boats and 3 trips per month. Caught species were recorded in number (including length distribution). A Kolmogorov-Smirnoff test was applied for the comparison between landings and observers on board length distributions.

3. Results and discussion

- Landings data: Figure 1 shows a continuous increase of the landings to a maximum in 1994. Since 1994 landings have gone decreasing, except in 1996 and 1997, till arise the lowest value of the recent years in 2002. Then, from 2003 onwards it shows an increasing trend till reached the highest value of the last years in 2009, followed by a new decrease the last year. There's still no scientific reasons which guarantee the sustainability of the recent landings increase in this fishery. Figure 2 shows a sort of fishery footprint from the information obtained with the observers on board programme. Fishing grounds are located at both sides of the Strait of Gibraltar and quite close to the main ports.

- LPUEs and CPUEs: Fishing effort increases too till 2009 (Figure 3). It is important to emphasize that the effort unit chosen (number of sales) cannot be too appropriate as do not consider the missing effort. Thus, in the years when the resource is not so abundant the missing effort increases substantially (fishing vessels with no catches, so no sale sheet were recorded). Thus, the LPUE trend from the decline of the fishery, 1997, should be interpreted with caution because it cannot be a real image of the resource abundance.

Whilst the CPUE trend from the tuning fleet (observers on board programme) shows a totally different situation. The Figure 4 presents the CPUE (number per line) from 2005 to 2009. Values vary around 3 red seabream per ± 70 hooks but the general trend seems to be slightly decreasing.

- Length frequencies:

The fishery resource suffers a decrease of the landed mean length (Figure 5) mainly from 1995 to 1998. It is necessary to point out that species probably does not have a homogeneous geographic and bathymetric distribution related to their length. This fact could explain the different landed mean length between the main landing ports, Tarifa and Algeciras. The mean

length of the landings gets progressively increasing from 1999 onwards, but along the last years the trend varies increasing again from 2006 on in both ports. However the median value from these years remains under the mean in every case and close to the minimum landing size in Algeciras. The mean length from both landing ports became lower in 2010.

Figure 6 presents the length distribution from the tuning fleet. Every year of comparison (2005-2009) presents significative differences between those and the landings length distribution. The differences among the sampling protocols adopted may be explained this fact: observes on board did a sort of concurrent sampling while in the fishmarket it had be done a stratified sampling (covering the 4 market categories).

4. Conclusion

There is no evidence of the fishery sustainability at the current levels. Control and enforcement of the management measures are desirable. From 2005 till 2009 landings increase every year, exceeding the fishing plans TAC. Landings and mean length decreasing in 2010 remember a recent and similar history from the middle 1990s.

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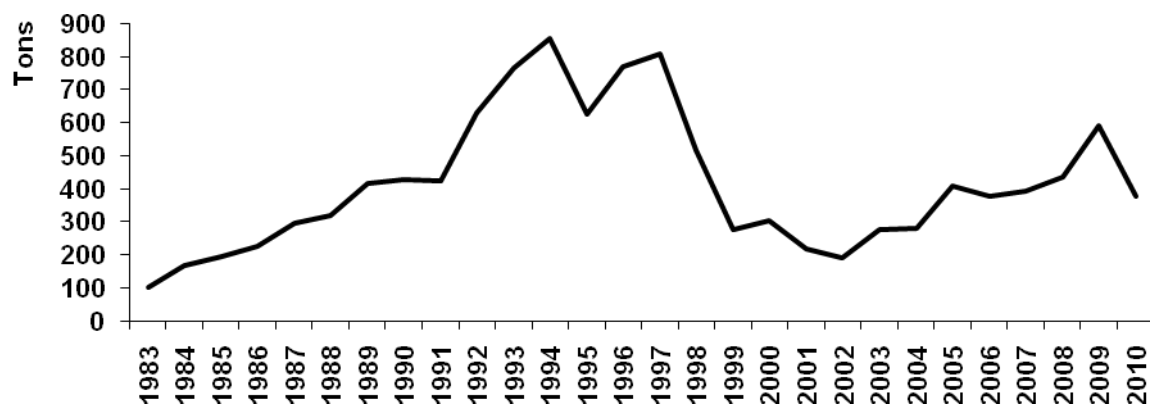


Figure 1. Red seabream Spanish fishery of the Strait of Gibraltar: Landings (1983-2010).

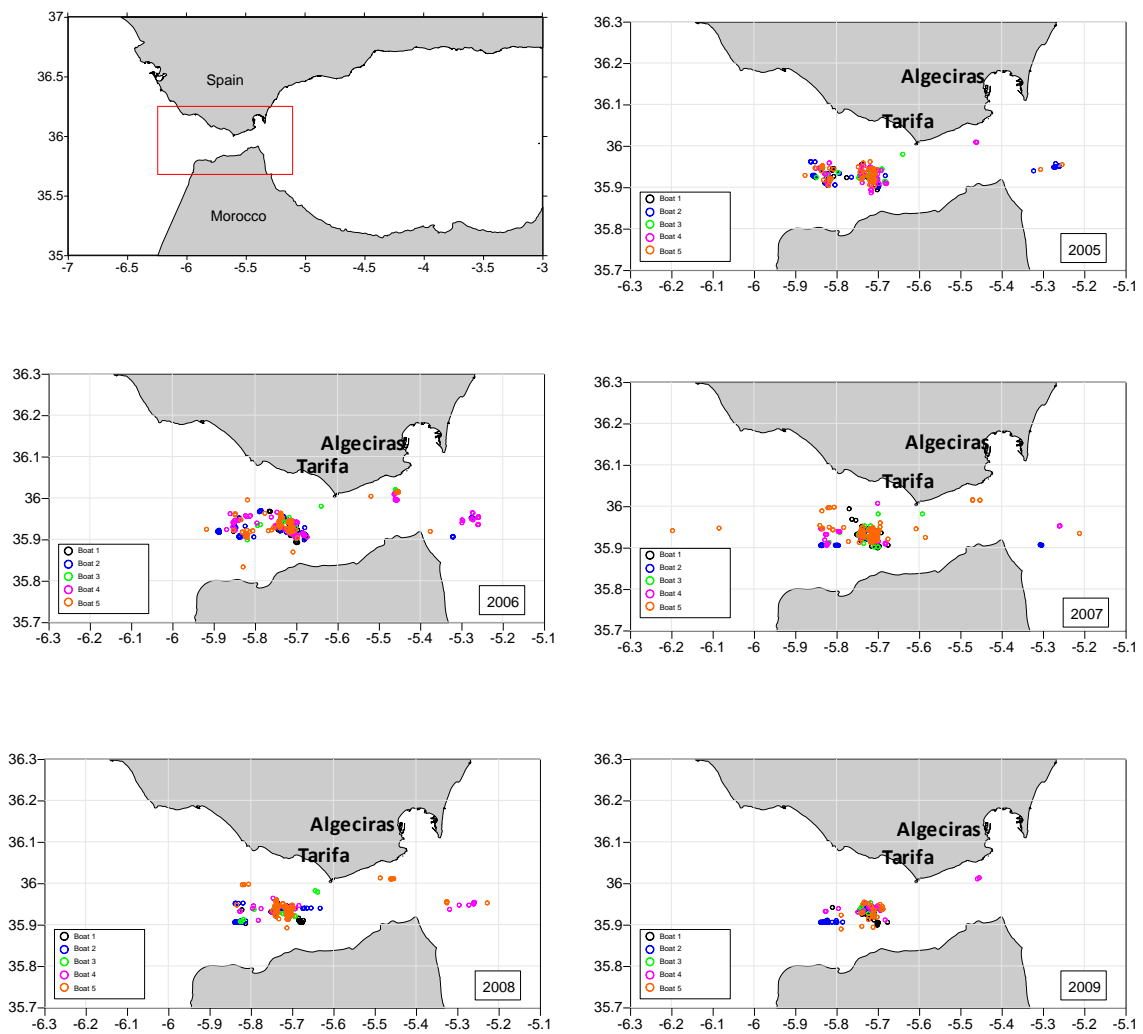


Figure 2. Red seabream Spanish fishery of the Strait of Gibraltar: Yearly soaking positions footprints from observers on board.

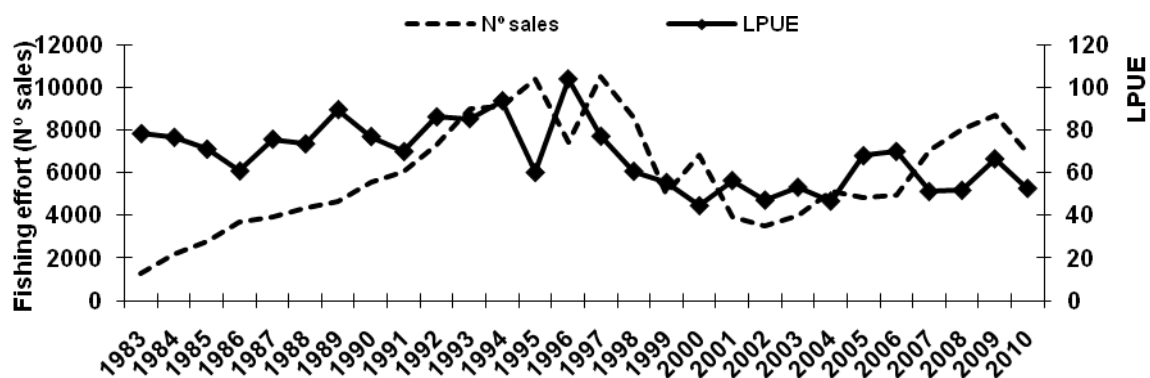


Figure 3. Red seabream Spanish fishery of the Strait of Gibraltar: Evolution of the chosen effort unit and estimated LPUE (1983-2010).

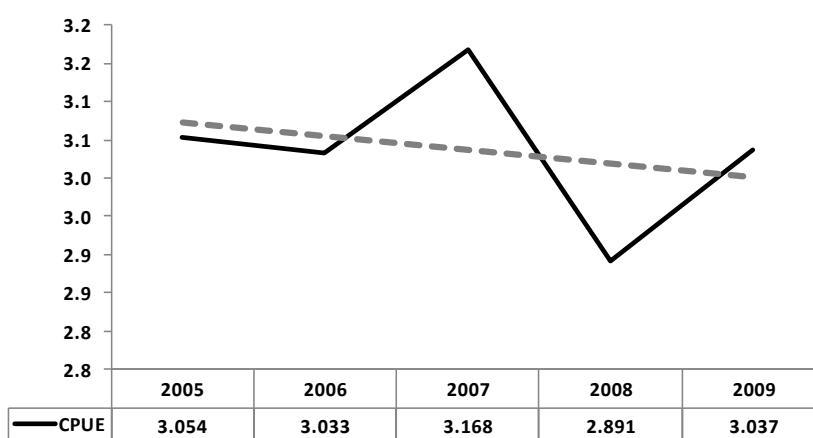
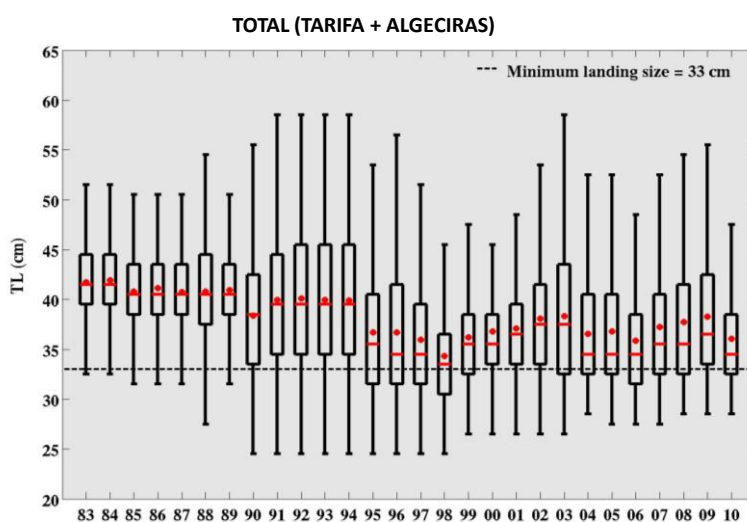


Figure 4. Red seabream Spanish fishery of the Strait of Gibraltar: Evolution of the CPUE from the observers on board programme (2005-2009).



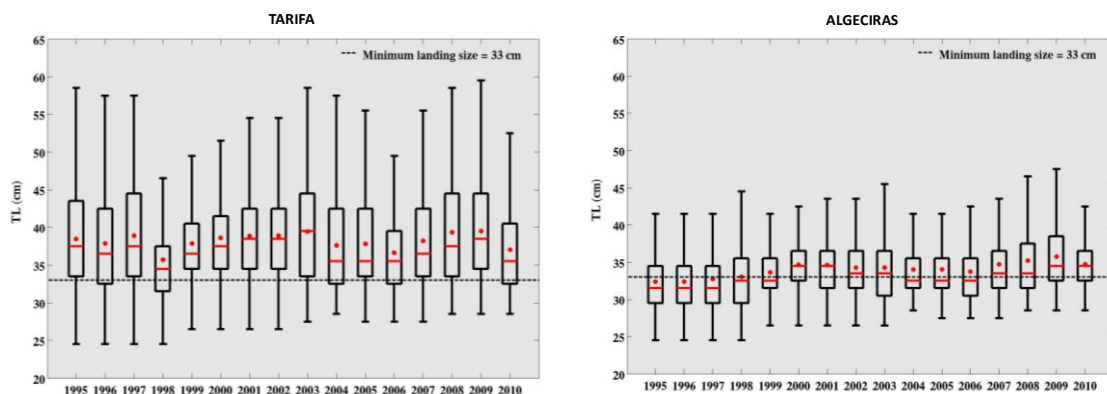


Figure 5. Red seabream Spanish fishery of the Strait of Gibraltar: Evolution of the landings length distribution descriptive statistics.

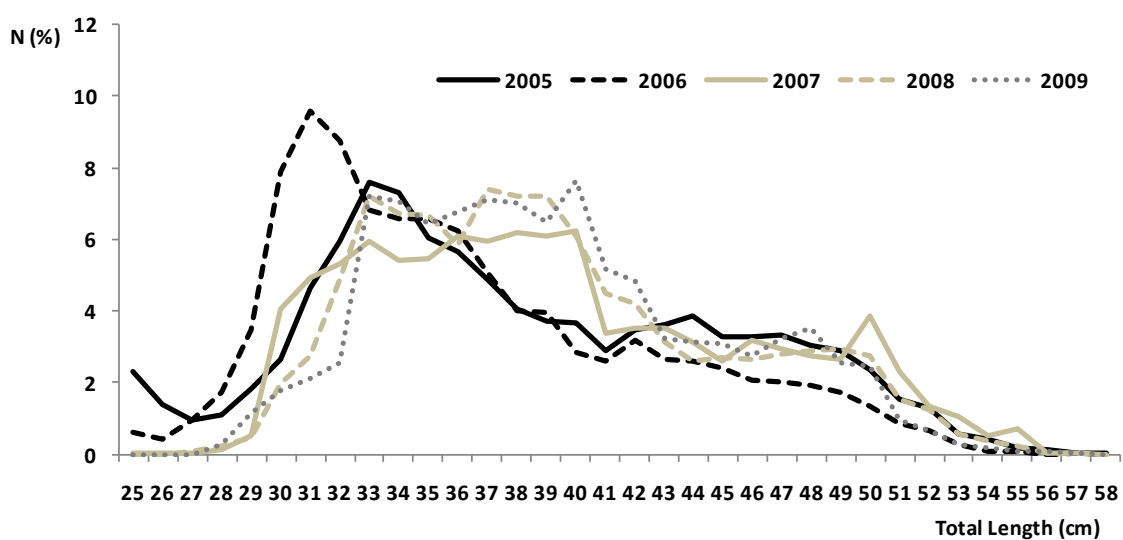


Figure 6. Red seabream Spanish fishery of the Strait of Gibraltar: Observers on board programme catches length distribution (2005-2009).